ABSTRACT OF THE DISCLOSURE

In order to achieve an isolation trench formation process according to the present invention in which the structure of a silicon nitride film liner can be easily controlled and to allow both of reduction of the device feature length and reduction in stress occurring in an isolation trench, the silicon nitride film liner is first deposited on the inner wall of the trench formed on a silicon substrate. The upper surface of a first embedded insulator film for filling the inside of the trench is recessed downward so as to expose an upper end portion of the silicon nitride film liner. Next, the exposed portion of the silicon nitride film liner is converted into non-silicon-nitride type insulator film, such as a silicon oxide film. A second embedded insulator film is then deposited on the upper portion of the first embedded insulator film, and the deposited surface is then planarized.